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C22C 5/04**B22F 1/00****C22C 1/05**(21)Application number : **2000-194012**(22)Date of filing : **28.06.2000**(71)Applicant : **TANAKA KIKINZOKU KOGYO KK**(72)Inventor : **SHOJI TORU
HITOMI SOICHI
TAKAGI YOSHIKAZU
WATANABE YOSHINOBU****(54) PLATINUM MATERIAL OF OXIDE DISPERSION-ENFORCED TYPE AND ITS PRODUCTION METHOD**

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a platinum material improved in creep strength property by improving a metallic structure in the platinum material of oxide dispersion- enforced type in which zirconium oxide is dispersed, and to provide its production method.

SOLUTION: This platinum material of oxide dispersion-enforced type, in which zirconium oxide is dispersed in platinum, is obtained through roll-working and recrystallization-heating treatment. A platinum crystal grain composing the platinum material has an average crystal-grain diameter of 200-1,500 μm in the roll-working direction, and an average crystal-grain aspect ratio of 20 or more.

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(71)Applicant : WC HERAEUS GMBH

(72)Inventor : FISCHER BERND
 GOY KARL-HEINZ
 KOCK WULF DR
 LUPTON DAVID FRANCIS DR
 MANHARDT HARALD
 MERKER JUERGEN DR
 SCHOELZ FRIEDHOLD
 ZUROWSKI BERTHOLD

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(54) DISPERSIVELY SOLIDIFIED PLATINUM MATERIAL, PRODUCTION OF THE MATERIAL AND USE OF THE MATERIAL

(57)Abstract:

PROBLEM TO BE SOLVED: To improve the stability with the lapse of time at high temps. of a platinum material by subjecting a platinum material incorporated with a specified amt. of base metal composed of cerium as simple substance or the combination of cerium, yttrium and zirconium to heating treatment, precipitating base metal-contg. elements as fine oxides by internal oxidation and dispersively strengthening the material.

SOLUTION: This platinum material is composed of P or of an alloy obtd. by independently added Rh, Ir and Au to Pt. This platinum material is incorporated with base metal composed of Ce as simple substance or of two kinds of combinations among Ce, Y and Zr, which is melted to form into a platinum- base metal alloy contg. these base metal elements by 0.005 to 1 wt.% and after that, it is heated at 600 to 1400°C in an oxidizing atmosphere to oxidize at least 75%, preferably, 90% of the base metal elements in the alloy. As an oxidizing medium, air, oxygen, water vapor, water vapor and hydrogen, a rare gas or nitrogen is used. This alloy shows excellent secular stability even at high temps. exceeding 1200°C, but, hot or cold working or welding may be performed before and after the heating treatment.

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(71)Applicant : TANAKA KIKINZOKU KOGYO KK

(72)Inventor : SHIMIZU SUSUMU
HAMADA TOKIO
IKEMATSU RYOJI

(54) OXIDE DISPERSION ENHANCED PLATINUM OR PLATING ALLOY AND ITS PRODUCTION

(57)Abstract:

PURPOSE: To produce a stable novel material more excellent in hightemp. creep characteristics than the coventional oxide dispersion enhanced platinum or platinum alloy and having high elongation.

CONSTITUTION: This oxide dispersion enhanced platinum or platinum alloy contains oxide of Sm or Eu dispersed in platinum or platinum alloy. It produced by sintering and plastically working powder formed by atomization or by forming granules, powder, a sheet or wire rod, which is oxidized at a high temp. and further subjected to press compression forming, sintering and plastic working.

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// C22F 1/00(21)Application number : **10-341194**(71)Applicant : **TANAKA KIKINZOKU KOGYO KK**(22)Date of filing : **01.12.1998**(72)Inventor : **HITOMI SOICHI**
HAMADA TOKIO
YAMAZAKI HARUKI
TAKAGI YOSHIKAZU**(54) STRENGTHENED PLATINUM MATERIAL AND ITS PRODUCTION**

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a strengthened platinum material which does not color glass, has high temp. creep characteristics and also has resistance to deformation and to provide a method for producing it.

SOLUTION: This strengthened platinum material is dispersed with either oxide of Zr, Sm, Eu, Y or Hf is dispersed by 0.05 to 2 wt.%, and high temp. creep fracture elongation at $\geq 1,000^{\circ}\text{C}$ is 10 to 50%. As to the method for producing the platinum material, a platinum alloy contg. either Zr, Sm, Eu, Y or Hf by 0.05 to 2 wt.% is formed into powder by an atomizing method, which is oxidized and sintered at a high temp. of 1,400 to 1,750°C for 1 to 100 hr and is thereafter subjected to plastic working.

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